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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/604,270	07/08/2003	Chuen-Ru Lee	9173-US-PA	1269
<div>31561 7590 07/03/2007</div> <div>JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE</div> <div>7 FLOOR-1, NO. 100</div> <div>ROOSEVELT ROAD, SECTION 2</div> <div>TAIPEI, 100</div> <div>TAIWAN</div>				
			<div>EXAMINER</div> <div>JONES, HUGH M</div>	
			<div>ART UNIT</div> <div>2128</div>	<div>PAPER NUMBER</div>
			<div>NOTIFICATION DATE</div> <div>07/03/2007</div>	<div>DELIVERY MODE</div> <div>ELECTRONIC</div>

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/604,270	Applicant(s) LEE ET AL.	
	Examiner Hugh Jones	Art Unit 2128	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 March 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
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Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
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DETAILED ACTION

1. Claims 1-20 of U. S. Application 10/604,270, filed 7/8/2003, are pending.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. **Claim 1-20 are rejected under 35 U.S.C. 101 because the claimed invention is drawn to non-statutory subject matter since the claims do not produce a concrete, useful and tangible result.**

4. It is not clear what constitutes the concrete, useful, tangible results. For example, consider claim 1:

1. (currently amended) A method ~~[[for designing]]~~ to design a liquid crystal display device, implemented in a computing system, the method comprising the steps of:

- measuring at least one viewing angle ~~[[among]]~~ in each of a plurality of liquid crystal display films, and determining a desired range of a cell gap between liquid crystal adjacent cells of a liquid crystal display device;
- calculating a panel transmittance rate and a gamut of a plurality of liquid crystal modules, and determining at least one value ~~[[of]]~~ from the range of the cell gap;
- obtaining optic characteristics of a plurality of color filter films and color modules, and determining a set of optic characteristics for a color filter as well as for the liquid crystal display device; and
- adjusting ~~[[values-related]]~~ a plurality of quantities relating to the set of optic characteristics of the liquid crystal display device and the color filter, thereby producing a set of adjusted quantities~~[[values]]~~ for present as well as future design purposes.

Adjusting some unknown quantity and thereby producing another unknown "adjusted" quantity does not provide for a concrete, useful, tangible result.

5. The above issues apply to all claims.
6. Analysis of claims 17-20 also indicates that the "system" or "system" is broad enough to include nonstatutory examples. The "data base" may also be mere software and broad enough to be nonstatutory.
7. Paragraph 61 of the specification discloses:

readable by a CD-ROM drive); (ii) alterable information stored on writable storage media (e.g., floppy disks within a diskette drive or hard-disk drive); or (iii) information conveyed to a computer by a communications medium, such as through a computer or telephone network, including wireless communications. The latter embodiment specifically includes information downloaded from the Internet and other networks. Such signal-bearing media, when carrying computer-readable instructions that direct the functions of the present invention, represent embodiments of the present invention.

8. The system claims are directed to method steps, and are not in standard US format.
9. An invention which is eligible for patenting under 35 U.S.C. 101 is in the useful arts when it is a machine, manufacture, process or composition of matter, which produces a concrete, tangible, and useful result. *The fundamental test for patent eligibility is thus to determine whether the claimed invention produces a "useful, concrete and tangible result."* The test for practical application as applied by the examiner involves the determination of the following factors:

(1) Useful - The Supreme Court in *Diamond v. Diehr* requires that the examiner look at the claimed invention as a whole and compare any asserted utility with the claimed invention to determine whether the asserted utility is accomplished. Applying utility case law the examiner will note that:

(a) the utility need not be expressly recited in the claims, rather it may be inferred.

(b) if the utility is not asserted in the written description, then it must be well established.

Furthermore, although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

(2) Tangible - Applying *In re Warmerdam*, 33 F.3d 1354, 31 USPQ2d 1754 (Fed. Cir. 1994), the examiner will determine whether there is simply a mathematical construct claimed, such as a disembodied data structure and method of making it. If so, the claim involves no more than a manipulation of an abstract idea and therefore, is nonstatutory under 35 U.S.C. 101. In *Warmerdam* the abstract idea of a data structure became capable of producing a useful result when it was fixed in a tangible medium which enabled its functionality to be realized.

(3) Concrete - Another consideration is whether the invention produces a concrete result. Usually, this question arises when a result cannot be assured. An appropriate rejection under 35 U.S.C. 101 should be accompanied by a lack of enablement rejection, because the invention cannot operate as intended without undue

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experimentation.

10. A claim that requires one or more acts to be performed defines a process.

However, not all processes are statutory under 35 U.S.C. 101. Schrader, 22 F.3d at 296, 30 USPQ2d at 1460. To be statutory, a claimed computer-related process must either: (A) result in a physical transformation outside the computer for which a practical application in the technological arts is either disclosed in the specification or would have been known to a skilled artisan (discussed in i) below), or (B) be limited to a practical application within the technological arts (discussed in ii) below). See *Diamond v. Diehr*, 450 U.S. at 183-84, 209 USPQ at 6 (quoting *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1877)) ("A [statutory] process is a mode of treatment of certain materials to produce a given result. It is an act, or a series of acts, performed upon the subject-matter to be transformed and reduced to a different state or thing.... The process requires that certain things should be done with certain substances, and in a certain order; but the tools to be used in doing this may be of secondary consequence."). See also *Alappat*, 33 F.3d at 1543, 31 USPQ2d at 1556-57 (quoting *Diamond v. Diehr*, 450 U.S. at 192, 209 USPQ at 10). See also *id.* at 1569, 31 USPQ2d at 1578-79 (Newman, J., concurring) ("unpatentability of the principle does not defeat patentability of its practical applications") (citing *O'Reilly v. Morse*, 56 U.S. (15 How.) at 114-19). If a physical transformation occurs outside the computer, a disclosure that permits a skilled artisan to practice the claimed invention, i.e., to put it to a practical use, is sufficient. On the other hand, it is necessary for the claimed invention taken as a whole to produce a practical application if there is only a transformation of signals or data inside a computer or if a

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process merely manipulates concepts or converts one set of numbers into another.

11. The claims do not provide for a concrete, useful, tangible result.

Claim Rejections - 35 USC § 112

12. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

13. Claims 17-18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

14. The preamble recites "...the system includes means for performing..." and therefore the claim is a "single means" claim. A single means claim, does not comply with the first paragraph of section 112. See *In re Hyatt*, 708 F.2d 712, 218 USPQ 195, 197 (Fed. Cir. 1983) ("the enabling disclosure of the specification [must] be commensurate in scope with the claim under consideration.")¹. A single means claim, i.e., where a means recitation does not appear in combination with another recited element of means, is subject to an undue breadth rejection under 35 U.S.C. 112, first paragraph. *In re Hyatt*, 708 F.2d 712, 714-715, 218 USPQ 195, 197 (Fed. Cir. 1983) (A single means claim which covered every conceivable means for achieving the stated purpose was held nonenabling for the scope of the claim because

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the specification disclosed at most only those means known to the inventor.). When claims depend on a recited property, a fact situation comparable to *Hyatt* is possible, where the claim covers every conceivable structure (means) for achieving the stated property (result) while the specification discloses at most only those known to the inventor.

15. *Donaldson* does not affect the holding of *In re Hyatt*, 708 F.2d 712, 218 USPQ 195 (Fed. Cir. 1983) to the effect that a single means claim does not comply with the enablement requirement of 35 U.S.C. 112, first paragraph. As *Donaldson* applies only to an interpretation of a limitation drafted to correspond to 35 U.S.C. 112, sixth paragraph, which by its terms is limited to "an element in a claim to a combination," it does not affect a limitation in a claim which is not directed to a combination. See also MPEP § 2164.08(a).

16. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

17. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention:

18. As explained in earlier actions, the issue is as follows. Due to the idiomatic and grammatical issues associated with the specification and claims, it is difficult to determine the unambiguous meaning of the claims.

19. Examples include (only a few are provided):

1 A method to design a liquid crystal display device, implemented in a computing system, the method comprising the steps of:

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measuring at least one viewing angle among a plurality of liquid crystal display films, determining a range of a gap between liquid crystal cells of a liquid crystal display device (**how?**); based upon (**how?**) the panel transmittance and gamut of a plurality of liquid crystal modules, determining at least one value of the gap between liquid crystal cells of the liquid crystal display device; based upon optic characteristics of a plurality of color filter films and color modules, determining a set of optic characteristics for a color filter as well as for the liquid crystal display device; and adjusting values related to the set of optic characteristics of the liquid crystal display device and the color filter, thereby producing a set of adjusted values for present as well as future design purposes. (the meaning is not clear)

2. The method of claim 1, wherein the range of the gap is determined using (**how?**) at least two values of the gaps of the plurality of liquid crystal display films along with the viewing angles corresponding thereto, thereby establishing a formula (**how?**) expressing the range using the values of the gaps and their corresponding viewing angles.

3. The method of claim 2, wherein the formula is obtained (**how?**) using trendline regression.

20. The system of claim 19, wherein a computer program is used to perform the steps. (a program cannot perform steps)

Claim Interpretation

20. Recitations following words such as *suitable* are provided no patentable weight. See claim 11 ("11. A method for designing a liquid crystal display module suitable for developing a system for designing a product, the system includes a database, wherein color characteristic parameters relating to a plurality of liquid crystal film, to a plurality of color filter film, to a plurality of testing modules, and to a plurality of").

No Prior Art Rejection

21. Respectfully, the Examiner spent considerable time reviewing Applicant's arguments, the amended claims as well as the specification and conducted an extensive search of the art – and the meaning of the claims is still not understood. No prior art rejection is applied because it would require further considerable speculation

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regarding the meaning of the claims, for the reasons provided earlier.

22. As per the MPEP; see *In re Wilson*, 424 F.2d 1382, 165 USPQ 494 (CCPA 1970) (if no reasonably definite meaning can be ascribed to certain claim language, the claim is indefinite, not obvious) and *In re Steele*, 305 F.2d 859, 134 USPQ 292 (CCPA 1962) (it is improper to rely on speculative assumptions regarding the meaning of a claim and then base a rejection under 35 U.S.C. 103 on these assumptions).

Allowable Matter

23. It appears that determining an optimal distance between pixels in order to obtain a particular viewing angle is novel and non-obvious over the prior art of record. However, this is based upon an educated guess as to Applicant's invention (Applicant's arguments re "adjacent cells"). It has not been claimed or persuasively shown to be present in Applicant's specification.

Response to Arguments

24. Applicant's arguments, filed 3/5/2007, are not persuasive. Applicants are thanked for the figure, amendments and remarks.

25. The 101 rejections are maintained. It is not clear what constitutes the concrete, useful, tangible results. For example, consider claim 1:

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1. (currently amended) A method ~~[[for designing]]~~ to design a liquid crystal display device, implemented in a computing system, the method comprising the steps of:

measuring at least one viewing angle ~~[[awong]]~~ in each of a plurality of liquid crystal display films, and determining a desired range of a cell gap between liquid crystal adjacent cells of a liquid crystal display device;

calculating a panel transmittance rate and a gamut of a plurality of liquid crystal modules, and determining at least one value ~~[[of]]~~ from the range of the cell gap;

obtaining optic characteristics of a plurality of color filter films and color modules, and determining a set of optic characteristics for a color filter as well as for the liquid crystal display device; and

adjusting ~~[[values-related]]~~ in plurality of quantities relating to the set of optic characteristics of the liquid crystal display device and the color filter, thereby producing a set of adjusted quantities ~~[[values]]~~ for present as well as future design purposes.

Adjusting some unknown quantity and thereby producing another unknown "adjusted" quantity does not provide for a concrete, useful, tangible result.

26. Applicants argue that a database is inherent in a system and therefore does not need to be claimed. This is not supported by the MPEP or case law.

27. Any inquiry concerning this communication or earlier communications from the examiner should be:

directed to: Dr. Hugh Jones telephone number (571) 272-3781,

Monday-Thursday 0830 to 0700 ET,

or

the examiner's supervisor, Kamini Shah, telephone number (571) 272-2279.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist, telephone number (703) 305-3900.

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or faxed to:

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or (703) 308-1396 (for informal or draft communications, please label *PROPOSED* or *DRAFT*).

/Hugh Jones/

Primary Examiner, Art Unit 2128

June 22, 2007

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- ☐ 1. **A plastic LCD design with high reliability and color-free readability**
Penz, P.A.; Sampell, J.B.; Collins, D.R.;
[Electron Devices, IEEE Transactions on](#)
Volume 32, Issue 11, Nov 1985 Page(s):2206 - 2213
[Abstract](#) | Full Text: [PDF\(1480 KB\)](#) IEEE JNL
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- ☐ 2. **New technologies improve passive LCDs and expand design flexibility**
Holland, C.E.;
[WESCON/97, Conference Proceedings](#)
4-6 Nov. 1997 Page(s):150 - 159
Digital Object Identifier 10.1109/WESCON.1997.632331
[Abstract](#) | Full Text: [PDF\(1576 KB\)](#) IEEE CNF
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- ☐ 3. **Colorimetric property of guest-host liquid crystal displays**
Seki, H.; Uwano, T.; Uchida, T.;
[Information Display, 1999, ASID '99, Proceedings of the 5th Asian Symposium on](#)
17-19 March 1999 Page(s):347 - 350
Digital Object Identifier 10.1109/ASID.1999.762778
[Abstract](#) | Full Text: [PDF\(200 KB\)](#) IEEE CNF
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- ☐ 4. **Design, synthesis and properties of polyimide alignment materials**
Fu-Lung Chen; Ted-Hong Shinn; Chein-Dhau Lee; Wen-Shiang Wang;
[Information Display, 1999, ASID '99, Proceedings of the 5th Asian Symposium on](#)
17-19 March 1999 Page(s):365 - 368
Digital Object Identifier 10.1109/ASID.1999.762782
[Abstract](#) | Full Text: [PDF\(204 KB\)](#) IEEE CNF
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- ☐ 5. **A single-cell high-quality black and white ST LCD**
Matsumoto, S.; Hatoh, H.; Murayama, A.; Yamamoto, T.; Kondo, S.; Kamagami, S.;
[Display Research Conference, 1988, Conference Record of the 1988 International](#)
4-6 Oct. 1988 Page(s):182 - 183
Digital Object Identifier 10.1109/DISPL.1988.11306
[Abstract](#) | Full Text: [PDF\(136 KB\)](#) IEEE CNF
[Rights and Permissions](#)
- ☐ 6. **A single-cell high-quality black and white ST liquid-crystal display**
Matsumoto, S.; Hatoh, H.; Murayama, A.; Yamamoto, T.; Kondo, S.; Kamagami, S.;
[Electron Devices, IEEE Transactions on](#)
Volume 36, Issue 9, Part 2, Sept. 1989 Page(s):1905 - 1909
Digital Object Identifier 10.1109/16.34268
[Abstract](#) | Full Text: [PDF\(660 KB\)](#) IEEE JNL
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1. An optical design for reflective color STN-LCDs
Komura, S.; Kuwabara, K.; Itou, O.; Funahata, K.; Kondo, K.; Saito, T.; Nagashima, Y.; Kubo, K.;
Information Display, 1999. ASID '99. Proceedings of the 5th Asian Symposium on
17-19 March 1999 Page(s): 37 - 40
Digital Object Identifier 10.1109/ASID.1999.762708
[AbstractPlus](#) | Full Text: [PDF](#)(244 KB) IEEE CNF
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2. Dynamic characterization of a-Si TFT-LCD pixels
Aoki, H.;
Electron Devices, IEEE Transactions on
Volume 43, Issue 1, Jan. 1996 Page(s): 31 - 39
Digital Object Identifier 10.1109/16.477590
[AbstractPlus](#) | [References](#) | Full Text: [PDF](#)(684 KB) IEEE JNL
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3. Design of poly-Si TFT-LCD panel with integrated driver circuits for an HDTV/XGA projection system
Byong-Deok Choi; Heuisung Jang; Oh-Kyong Kwon; Hong-Gyu Kim; Myung-Jin Soh;
Consumer Electronics, IEEE Transactions on
Volume 46, Issue 1, Feb. 2000 Page(s): 95 - 104
Digital Object Identifier 10.1109/30.826386
[AbstractPlus](#) | Full Text: [PDF](#)(396 KB) IEEE JNL
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4. The development of LCD panel display based rapid prototyping system for advanced manufacturing
Luo, R.C.; Jyh Hwa Tzou; Wei Zen Lee;
Robotics and Automation, 2000. Proceedings. ICRA '00. IEEE International Conference on
Volume 4, 24-28 April 2000 Page(s): 3083 - 3088 vol.4
Digital Object Identifier 10.1109/ROBOT.2000.845137
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5. A plastic LCD design with high reliability and color-free readability
Penz, P.A.; Sampsel, J.B.; Collins, D.R.;

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☐ **1. New technologies improve passive LCDs and expand design flexibility**
 Holland, C.E.;
[WESCON/97, Conference Proceedings](#)
 4-6 Nov. 1997 Page(s):150 - 159
 Digital Object Identifier 10.1109/WESCON.1997.632331
[Abstract](#) | Full Text: [PDF\(1576 KB\)](#) IEEE CNF
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☐ **2. A four-domain in-plane-switching LCD**
 Li-Sen Chuang; Dai-Liang Ting; Ching-Chao Chang;
[Information Display, 1999, ASID '99, Proceedings of the 5th Asian Symposium on](#)
 17-19 March 1999 Page(s):211 - 214
 Digital Object Identifier 10.1109/ASID.1999.762748
[Abstract](#) | Full Text: [PDF\(296 KB\)](#) IEEE CNF
[Rights and Permissions](#)

☐ **3. A single-cell high-quality black and white ST LCD**
 Matsumoto, S.; Hato, H.; Murayama, A.; Yamamoto, T.; Kondo, S.; Kamagami, S.;
[Display Research Conference, 1988., Conference Record of the 1988 International](#)
 4-6 Oct. 1988 Page(s):182 - 183
 Digital Object Identifier 10.1109/DISPL.1988.11306
[Abstract](#) | Full Text: [PDF\(136 KB\)](#) IEEE CNF
[Rights and Permissions](#)

☐ **4. A double-layer electrically controlled birefringence liquid-crystal display with a wide-viewing-angle cone**
 Seki, H.; Itoh, Y.; Uchida, T.; Masuda, Y.;
[Display Research Conference, 1991., Conference Record of the 1991 International](#)
 15-17 Oct. 1991 Page(s):188 - 191
 Digital Object Identifier 10.1109/DISPL.1991.167466
[Abstract](#) | Full Text: [PDF\(272 KB\)](#) IEEE CNF
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☐ **5. Possibility of stereoscopic displays by using a viewing angle dependence of twisted nematic liquid crystal cells**
 Okada, H.; Chen, J.; Bos, P.J.:

Art Unit: 2128

S39: (2) (("6892221") or ("6675177")).PN.
S38: (1) ("4048481").PN.
S40: (1) simulat\$4 and S39
S42: (1) ("6259503").PN.
S44: (2326) lcd same (simulat\$4 or model\$3)
S45: (0) "pixel to pixel"
S46: (11347) "pixel pixel"
S47: (141) S44 and S46
S48: (3) S44 same S46
S49: (12400) viewing adj angle
S52: (237) pixel adj separation
S50: (23) S49 and S47
S53: (0) S47 and S52
S54: (0) S44 and S52
S55: (22) lcd and S52
S56: (1) S49 and S55
S58: (2236) cell adj separation
S59: (12) S49 and S58
S57: (4) S49 and S52
S60: (2582) lcd with design\$3
S62: (65) S61 and separation
S61: (304) S60 and S49
S63: (35) S62 and (simulat\$4 or model\$3)
S64: (12) S62 and simulat\$4
S65: (0) S49 same ppi and lcd
S66: (13) S49 and ppi and lcd